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Minimelanolocus atlanticus sp. nov. and *M. navicularis* from the Brazilian Atlantic Forest

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Abstract—*Minimelanolocus navicularis* and a new species, *M. atlanticus*, are described and illustrated from collections on decaying leaves of unidentified plants. *Minimelanolocus atlanticus* is distinguished by oblong, 2-septate conidia, with brown basal and central cells and gray to subhyaline apical cell and slightly flattened or sub-rounded apex. Notes are provided on *M. navicularis* recorded from Brazilian Atlantic Forest.

Key words—conidial fungi, asexual fungi, neotropic, systematic

Introduction

The genus *Minimelanolocus,* established by Castañeda-Ruiz et al. (2001) and typified by *Pseudospiropes navicularis* R.F. Castañeda [≡ *M. navicularis*], is characterized by conidiophores that are macronematous, mononematous, erect, unbranched, smooth or verrucose and conidiogenous cells that are polyblastic, sympodial elongated, terminal, indeterminate, and with inconspicuous or slightly prominent, narrow, opaque, refractive to somewhat obscure conidiogenous loci. *Minimelanolocus* currently comprises 31 species (Castañeda-Ruiz et al. 2001, 2003; Fiuza et al. 2017; Heredia et al. 2014; Hernández-Restrepo et al. 2012; Liu et al. 2015; Ma et al. 2008, 2011; Tian

et al. 2016; Xia et al. 2014; Zhang et al. 2009, 2010), most of which occur as saprobes on decaying leaves, rotten wood, dead branches, bamboo culms, and submerged plant debris in aquatic habitats.

During a mycological survey of microfungi associated with leaf litter in a Brazilian Atlantic forest, two conspicuous fungi representing *Minimelanolocus* were collected. We describe one as a new species and present a new description of the other, *M. navicularis*.

Materials & methods

Individual collections were placed in plastic bags, taken to the laboratory, and treated according to Castañeda-Ruiz et al. (2016). Mounts were prepared in lactic acid (90%) or in polyvinyl alcohol-glycerol (8 g PVA in 100 ml H_2O + 5 ml glycerol) and lactofuchsin (0.1 g acid fuchsin in 100 ml 85% lactic acid) following Carmichael (1955). Measurements were made at a magnification of ×1000 under a Nikon Eclipse Ni-U microscope with bright field optics, and photomicrographs were taken using DIC optics with a Nikon DS-Fi2 camera. The holotype was deposited in the Herbarium of Universidade Federal de Pernambuco, Recife, Brazil (URM).

Taxonomy

Minimelanolocus atlanticus P.M.O. Costa, Malosso & R.F. Castañeda, **sp. nov.** Figs 1, 2

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Differs from *Minimelanolocus obscurus* by its 2-septate and versicolored conidia.

Type: Brazil, Pernambuco, Igarassú, RPPN Refúgio Ecológico Charles Darwin, 7°48′S 34°57′W, on decaying leaves of an unidentified plant, 12.V.2017, coll. P.M.O. Costa (**Holotype**, URM 90133).

Etymology: Latin, *atlanticus*, refers to habitat of the fungus, Brazilian Atlantic Forest.

Colonies on the natural substrate, effuse, hairy, brown. Mycelium superficial and immersed, composed of septate, branched, brown, smooth-walled hyphae, 2–3 µm diam. Conidiophores macronematous, mononematous, erect, straight or flexuous, cylindrical, slightly geniculate near the apex, unbranched, 7–15-septate, dark brown below, pale brown toward the apex, 200–300 × 5–7 µm, smooth. Conidiogenous cells polyblastic, somewhat sinuate with inconspicuous denticulate or faintly cicatrized, opaque loci, terminal, integrated, indeterminate with several sympodial extensions, pale brown, 30–60 × 3.5–4 µm. Conidial secession schizolytic. Conidia solitary, acropleurogenous, oblong, sub-rounded or slightly flattened at the apex, 2-septate, bicolor with basal and central cells brown to dirty brown, apical cell smoked-gray to subhyaline, smooth, dry, 18–21 × 4–5 µm. Sexual state unknown.

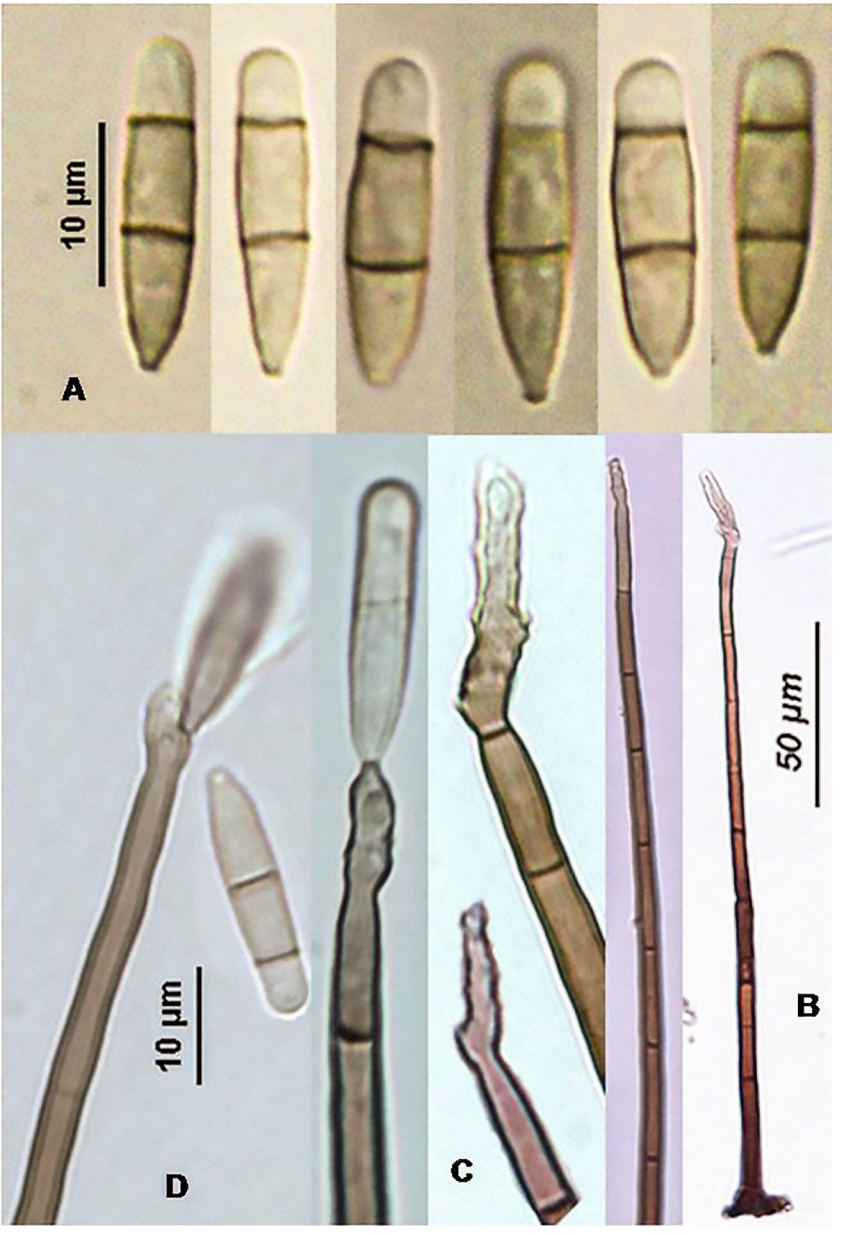

Fig. 1. *Minimelanolocus atlanticus* (ex holotype URM 90133). A. Conidia; B. Conidiophores and conidiogenous cells; C. Conidiogenous cells; D. Conidiogenous cells and conidia. C & D share the same scale.

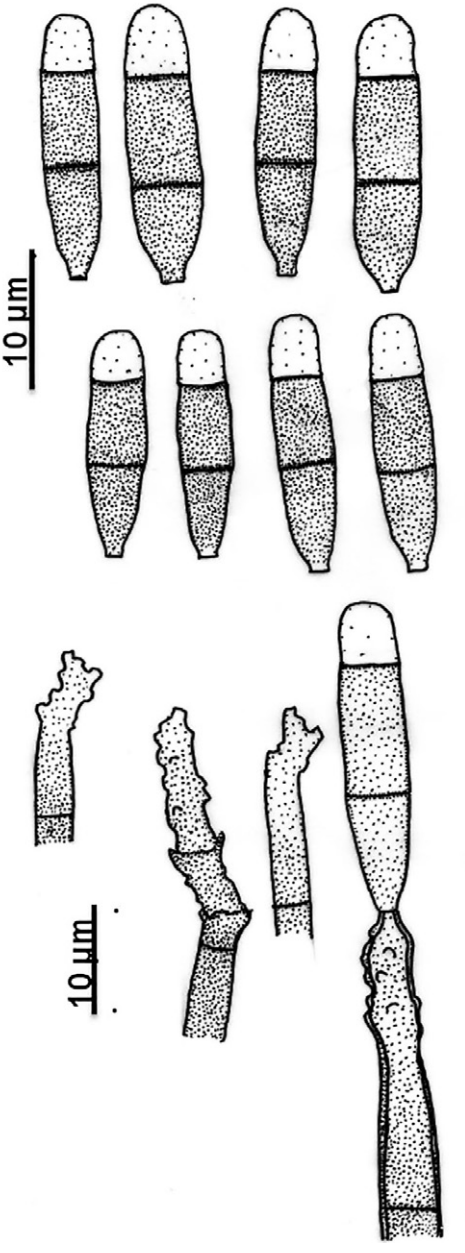

Fig. 2. *Minimelanolocus atlanticus* (ex holotype URM 90133). Conidiogenous cells and conidia.

Notes: *Minimelanolocus obscurus* (Matsush.) R.F. Castañeda & Heredia [≡ *Pseudospiropes obscurus* Matsush.] is similar to *M. atlanticus* in producing oblong conidia but is distinguished by conidia that are 1–4-septate (usually 3-septate), larger (18–34 × 4.5–8 µm), and uniformly colored subhyaline or pale brown (Castañeda-Ruiz et al. 2001, Liu et al. 2015, Matsushima 1983).

Minimelanolocus navicularis (R.F. Castañeda) R.F. Castañeda, Cryptog. Mycol. 22: 9 (2001). Fig. 3

Conidiophores macronematous, mononematous, erect, straight or flexuous, unbranched, cylindrical, inflated at the base, 2–5-septate, smooth, brown, pale brown above, smooth, 43–70 × 4–6 µm. Conidiogenous cells polyblastic, integrated, terminal, indeterminate, sympodial elongated,

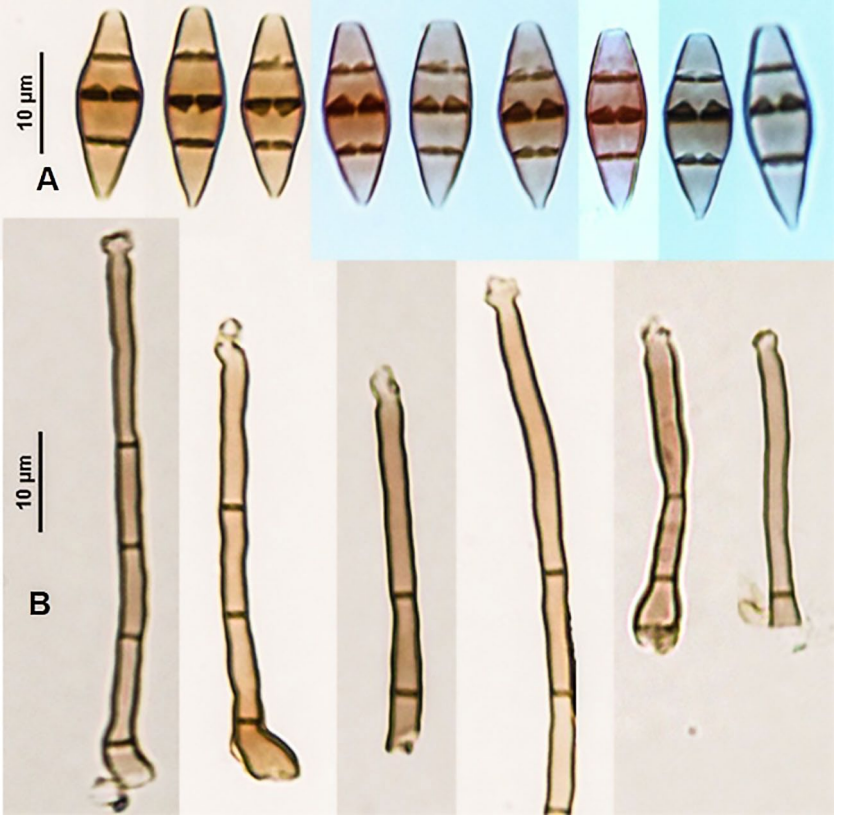

Fig. 3. *Minimelanolocus navicularis* (ex URM 90185).
A. Conidia; B. Conidiophores and conidiogenous cells.

inconspicuous denticulate, slightly melanized at the loci, 14–22 × 3–4 µm, pale brown. Conidial secession schizolytic. Conidia solitary, acropleurogenous, navicular, straight, smooth, 3-euseptate, 17–24 × 5–8.5 µm, obscure at the septa, dry, with subhyaline to pale brown end cells, brown to dark brown central cells.

Specimen Examined: **BRAZIL, Pernambuco State**, Lagoa da Mata, Ilha de Itamaracá, 7°46′S 34°51′W, on decaying leaves of an unidentified plant, 23.XI.2016, coll. W.L. Tavares (URM 90185).

Notes: *Minimelanolocus navicularis* has been previously recorded in Brazil by Santa Izabel et al. (2011); their specimen had longer conidiophores (45–155 µm) than our specimen, but the conidia in both specimens closely match those of the type species (20–25 × 6–8 µm; Castañeda-Ruiz 1987).

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